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Small Grain Variety Tests Pennsylvania, 1941-47

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Recommendations

Based on performance and other characteristics of the various small grain varieties in outlying tests at various locations in Pennsylvania, the following varietal recommendations can be made:

Recommended	Not Recommended
Winter Barley	
Wong	Poland
Kentucky No. 1	Ohio No. 1
	Missouri Beardless
Tennessee Winter	Nassau
	Wisconsin Winter
Winter Wheat	
Thorne	Yorkwin
	Cornell 595
Nured	Fairfield
	Fulcaster
Nittany	Leap's Prolific
	Forward
Purkof (Northern Pennsylvania only)	Red Rock
Spring Oats	
Clinton	Vicland
Ajax (acceptable, but susceptible to crown rust)	Keystone
	Cornellian
	Patterson
	Vanguard 7
	Columbia
	Huron
	Erban
	Beaver

Small Grain Variety Tests* Pennsylvania, 1941-47

A Contribution of the Department of Agronomy†
Compiled by J. B. Washko

ALMOST TWO MILLION acres of Pennsylvania crop land is seeded annually to small grains. Soft red winter wheat is the most important small grain in the State on an acreage basis, and oats is a close second. Winter barley is being grown on a considerable acreage in the southeastern part. Spring barley, spring wheat and rye are of comparatively minor importance in Pennsylvania. The State acre yields (10 year average 1936-45) for the various small grains are: winter wheat, 20.1 bushels; spring oats, 29.4 bushels; and barley, 33.0 bushels. These yields are rather low and can be increased considerably by the use of superior varieties in conjunction with better fertilization and cultural practices.

An important objective of the small grain program of The Pennsylvania Agricultural Experiment Station is to make available to Pennsylvania farmers new and better grain varieties. The characteristics the Station is seeking are : (1) high yielding capacity, (2) grain of high quality, (3) resistance to lodging, (4) disease resistance, (5) insect resistance, (6) greater winter hardiness in fall sown grain, and (7) satisfactory straw yields, since considerable straw is needed for bedding in a livestock state such as Pennsylvania. Such superior varieties are obtained as introductions from other states, and by development through plant breeding at the Station. Considerable effort is involved in determining whether a variety is superior to those already in use under the diverse soil and climatic conditions existing in this State. This is best accomplished by conducting outlying varietal tests with the various small grains in representative areas. The number of these tests is being increased as means become available so that the diverse soil and climatic environments can be more adequately sampled for varietal adaptability, in order to make more specific recommendations on the use of varieties.

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† This report was based on results contributed through the efforts of: C. F. Noll, *Professor Emeritus of Agronomy;* C. O. Cromer, *Professor of Farm Crops, retired;* J. K. Thornton, *Associate Professor of Farm Crops;* H. W. Higbee, *Associate Professor of Soil Technology;* M. T. Henderson, *Associate Professor of Agronomy;* J. B. Washko, *Associate Professor of Agronomy;* C. J. Irvin, *Assistant Professor of Experimental Agronomy, retired;* and A. Manwiller, C. S. Bryner, and P. E. Smith, *Resident Fellows in Agronomy.*

Outlying varietal testing of winter wheat, winter barley, and spring oats was initiated in the fall of 1940.[1] The number of tests for each small grain ranged from 2 to 7 at various locations in the State each year. The varieties were grown in rod rows, each plot consisting of three rows with only the middle row being harvested. Each variety was replicated from three to five times at each location, depending upon the type of statistical design used. Each test was made up of 10 or more varieties or strains and was conducted on farms of interested growers. Varieties and strains were added or removed, based on their performance in these tests. The new strains listed in the various tests were new introductions from nearby states and lines developed in the Pennsylvania breeding program. Tables, summarizing the performance of the varieties grown in all years from 1941-1947 and for the past four years 1944-1947, are included under the discussion for each grain. Each year's results and the performance of all varieties or strains at different locations for that year are given in the tables 7 to 23.

WINTER BARLEY

Tables 1 and 2 summarize the yielding capacity of several of the standard winter barley varieties. The Poland variety outyielded slightly Kentucky No. 1 and Tennessee Winter for the seven-year period 1941-1947. Wong, which was first included in the outlying tests in 1942, has shown up well, as indicated by the data. The six-year average yields for Poland, Kentucky No. 1, and Wong differ only slightly, indicating only slight differences in yielding capacity. This yield relationship has not changed much in the past four years, as shown by table 2. Nassau showed up poorest of the six varieties included in all tests during the last four years. That varieties should

Table 1.— Summary of winter barley tests conducted at various locations in Pennsylvania, yields in bushels per acre, 1941-47

Variety *	1941	1942	1943	1944	1945	1946	1947	Average of all Tests	
	8 Tests	8 Tests	5 Tests	6 Tests	6 Tests	2 Tests	1 Test	7-Year Avg.	Last 6-Year Avg.
Poland	45.9	41.7	38.1	44.7	49.0	40.6	41.9	43.1	42.7
Kentucky No. 1	44.0	40.9	41.2	38.3	50.1	42.5	39.4	42.3	42.1
Tennessee Winter	39.6	38.3	35.2	39.2	46.7	38.0	40.0	39.6	39.6
Wong	——	43.1	35.6	41.1	56.2	41.5	29.1	——	41.1
Ohio No. 1	——	——	——	34.6	43.6	43.3	39.9	——	——
Nassau	——	——	——	29.8	47.5	41.8	27.5	——	——

* Only those varieties are included which appeared in all years in all tests and in the last 4 years in all tests.

[1] This was made possible with the help of a $1200 annual grant by the Eastern States Farmers' Exchange.

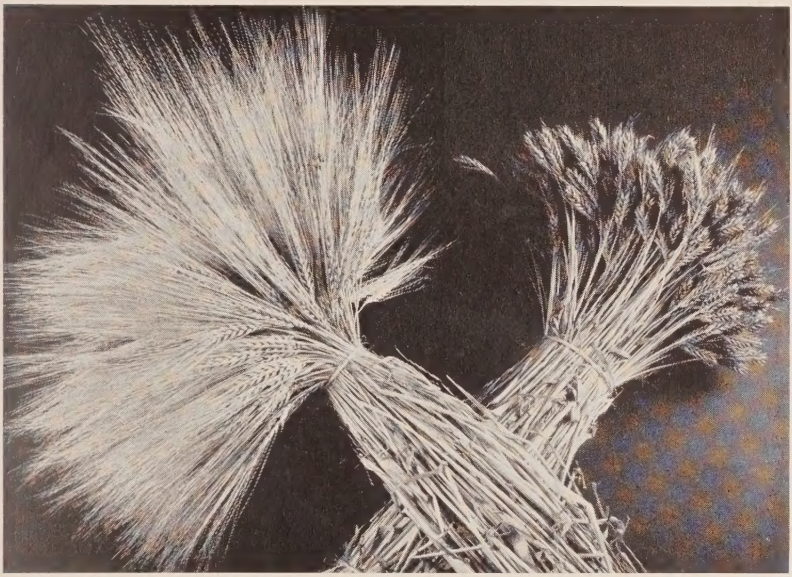

Fig. 1.—Kentucky No. 1 winter barley (left) and Wong winter barley (right)

not be chosen on the basis of yield alone certainly applies in the case of the winter barley varieties tested. Poland, even though a good yielder, cannot be recommended for this State, because of its weak straw. Wong, Kentucky No. 1, and Tennessee Winter are recommended, not only because they yield well, but because they possess other desirable characteristics. Descriptive notes on these various varieties follow:

Wong — A high yielding variety with very strong straw which was released in 1941 by the New York Station. It seems especially adapted to fertile soils where lodging is a problem. It is semi-bearded or

Table 2.— Summary of winter barley tests conducted at various locations in Pennsylvania, yields in bushels per acre, 1944-47

VARIETY *	1944 6 Tests	1945 6 Tests	1946 2 Tests	1947 1 Test	4-YEAR AVERAGE All Tests
Poland	44.7	49.0	40.6	41.9	44.1
Kentucky No. 1	38.3	50.1	42.5	39.4	42.6
Wong	41.1	56.2	41.5	29.1	42.0
Tennessee Winter	39.2	46.7	38.0	40.0	41.0
Ohio No. 1	34.6	43.6	43.3	39.9	40.4
Nassau	29.8	47.5	41.8	27.5	36.7

* Only those varieties are included which appeared in all tests in all years.

awnleted, highly resistant to mildew, and moderately winter hardy. It is susceptible to loose smut and could possess greater winter-hardiness, particularly for areas of the State other than Southeastern Pennsylvania. In those regions of the State where winter barley is subject to winter injury, the more winter hardy Kentucky No. 1 or Tennessee Winter should be seeded in preference to Wong.

Kentucky No. 1 — A high yielding variety with moderately stiff straw developed by the Kentucky Experiment Station. It is rough awned and resistant to stripe, but is susceptible to both mildew and loose smut. It is very winter hardy.

Tennessee Winter — A good yielding, very winter-hardy type variety that has characteristics similar to Kentucky No. 1, but which yields slightly less. The Tennessee Station first began breeding work with this type, and other stations made selections out of this very winter-hardy type. Kentucky No. 1 and Ohio No. 1 are examples of such selections.

Poland — A high yielding, but weak-strawed variety with other characteristics similar to Kentucky No. 1 and Tennessee Winter. It was introduced into other areas originally from New York State but never became popular because of its weak straw. Very little is being grown today because of this weakness.

Ohio No. 1 — A Tennessee Winter type introduced by the Ohio Station. It is bearded and rough awned and is similar to Kentucky No. 1 in many respects. Kentucky No. 1 or Tennessee Winter are preferred to this variety in Pennsylvania.

Nassau — A bearded, smooth-awned variety released by the New Jersey Station in 1943. It is only moderately winter hardy and has only moderately stiff straw. Wong is preferred to this variety in Pennsylvania.

WINTER WHEAT

Of the numerous wheat varieties tested from 1941-1947 all but six were eliminated from the tests for one reason or another, as indicated in table 3. The highest yielding varieties for this seven-year period were Thorne, Yorkwin, and Nured. While Thorne led the test, the yield differences between these three are too small to be significant. As indicated in table 3, the yields of Nittany, Purkof, and Leap's Prolific were of approximately the same order, but were lower than of the varieties already mentioned. The yield differences between the first group (Thorne, Yorkwin, and Nured) and the second, consisting of Nittany, Purkof, and Leap's Prolific, approximated only two bushels per acre, indicating good yielding capacity for all varieties.

Table 3.— Summary of soft winter wheat tests conducted at various locations in Pennsylvania, yields in bushels per acre, 1941-47

VARIETY *	1941 3 Tests	1942 6 Tests	1943 7 Tests	1944 6 Tests	1945 7 Tests	1946 3 Tests	1947 2 Tests	7-YEAR AVERAGE ALL TESTS
Thorne	42.9	29.9	27.7	33.1	36.8	26.2	32.4	32.7
Yorkwin	43.1	25.6	32.4	32.9	33.1	25.6	35.5	32.6
Nured	41.1	28.3	29.8	32.7	33.2	24.9	36.0	32.3
Nittany	40.6	26.0	27.3	31.5	32.1	23.2	34.7	30.8
Purkof	38.6	26.6	30.9	31.5	30.8	23.0	33.2	30.7
Leap's Prolific	37.6	27.5	26.4	29.4	33.7	23.9	31.5	30.0

* Only those varieties are included which appeared in all tests each year.

This yield relationship has changed very little in the past four years, as shown by table 4. Thorne continues to yield slightly, but not significantly, better than Yorkwin or Nured. Fairfield, an Indiana variety, performed well enough to be included in this better yielding group. The relative standing of Nittany, Leap's Prolific, and Purkof remained the same for the past four years. Thorne is generally preferred to the others listed, because of its consistent high yields and other desirable characteristics. Descriptive notes on these varieties follow:

Thorne — A very desirable, high yielding, strong strawed variety, which seems well adapted to Pennsylvania. This beardless, red-kerneled variety was released by the Ohio Station in 1937. It carries resistance to loose smut and mosaic, but is susceptible to scab. Thorne appears to be winter hardy enough for Pennsylvania except possibly in the northern tier of counties. When milled, it makes good, soft wheat flour.

Yorkwin — A good yielding, beardless, white-kerneled wheat variety developed by the New York Station. It is winter hardy, rather stiff strawed, and carries some resistance to loose smut. Its popularity is limited in Pennsylvania, since red wheat is generally preferred to white wheat.

Table 4.— Summary of soft winter wheat varietal tests conducted at various locations in Pennsylvania, yields in bushels per acre, 1944-47

VARIETY *	1944 6 Tests	1945 7 Tests	1946 3 Tests	1947 2 Tests	4-YEAR AVERAGE ALL TESTS
Thorne	33.1	36.8	26.2	32.4	32.1
Yorkwin	32.9	33.1	25.6	35.5	31.8
Fairfield	32.9	32.6	24.3	37.4	31.8
Nured	32.7	33.2	24.9	36.0	31.7
Nittany	31.5	32.1	23.2	34.7	30.4
Leap's Prolific	29.4	33.7	23.9	31.5	29.6
Purkof	31.5	30.8	23.0	33.2	29.6

* Only those varieties are included which appeared in all tests each year.

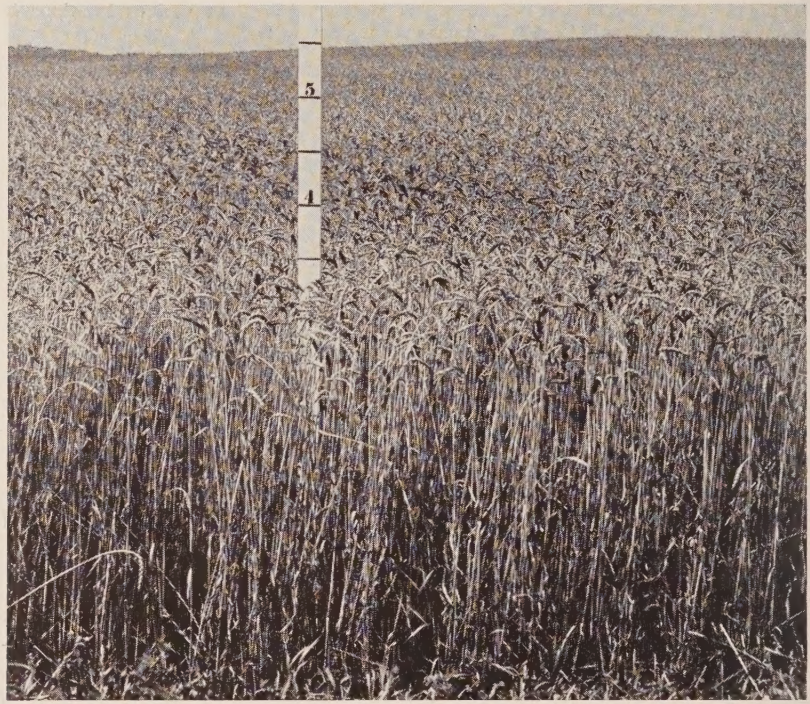

Fig. 2.—A field of the outstanding soft winter wheat variety in Pennsylvania—Thorne

Nured — A high yielding, beardless, red-kerneled variety developed by the New York Station. It carries resistance to loose smut and its straw is only moderately strong. It compares quite favorably with Thorne, but Thorne is generally preferred.

Fairfield — A comparatively new beardless variety developed in Indiana. This red-kerneled variety is satisfactory in winter-hardiness; it has moderately good straw and good milling quality. While it is resistant to loose smut, it is very susceptible to scab. Yields have been variable; in some tests it has yielded as well as Thorne or better, in others much less. Since its straw is weaker and its yield record less consistent than that of Thorne, it is not recommended for Pennsylvania.

Nittany — A bearded variety developed by the Pennsylvania Station, also known as Pennsylvania 44. It is red-kerneled and has good milling quality. Its straw is weak, but its high straw yield has found favor with livestock men. At present it is considered inferior to Thorne, because of its lower grain yield and weaker straw.

Leap's Prolific — A beardless, red-kerneled variety introduced from Virginia and grown quite extensively in the past in Southeastern Pennsylvania. It is being replaced by Thorne because its straw is rather weak, and it is less winter hardy and lower yielding than Thorne.

Purkof — A beardless, red-kerneled variety developed by the Purdue Experiment Station. The grain lacks desirable milling qualities but is satisfactory for feed purposes. Its outstanding characteristic is its high degree of winter hardiness. For this reason only it is recommended for the northern tier of counties in Pennsylvania. In other characteristics, it is inferior to Thorne and therefore merits little consideration.

New Varieties

Several new wheat varieties recently released by other experiment stations are now being tested. The comments made on these should be considered provisional since they are based on only one or two years' data. Obviously their true value for this State can be obtained only by additional years of testing. The varieties are:

Butler — Released in 1947 by the Ohio Station. This is a bearded variety, and in tests thus far its yields approximate those of Thorne. In other characteristics, it does not appear superior to Thorne.

Newcaster — is a recently released variety from Illinois. It is bearded and to date shows little promise for this State.

Blackhawk — is a new variety developed by the Wisconsin Experiment Station. This bearded variety carries rust resistance, but its yield record to date is slightly below that of Thorne.

Vigo — is a recent development of the Purdue Station. It is a beardless variety and rust resistant. While it is outstanding in Indiana, its Pennsylvania performance has been disappointing.

SPRING OATS

Since the inception of the outlying tests in 1941, there has been a revolutionary change in the use of oat varieties. This is due largely to the development of new disease-resistant oat varieties with superior agronomic characteristics. First, it was a change over to the use of such varieties as Vicland and similar types with Victoria germ plasm, carrying resistance to the various forms of crown rust and smuts. Just as the culture of these new varieties was at its peak, a new oat blight (*Helminthosporium victoriae*) appeared in almost epidemic proportions to wipe out this popularity. Fortunately, new varieties (Bond crosses) were being produced which are resistant to this new Helminthosporium blight, and these are now being increased and distributed to replace the Victoria type varieties.

Table 5.— Summary of spring oat tests conducted at various locations in Pennsylvania, yields in bushels per acre, 1941-45

VARIETY	1941 11 Tests	1942 8 Tests	1943 5 Tests	1944 7 Tests	1945 4 Tests	AVERAGE ALL TESTS
Cornellian	50.0	47.9	34.5	41.7	43.9	43.6
Keystone	52.0	43.6	31.6	43.3	46.2	43.3
Patterson	51.0	48.5	30.8	42.1	41.0	42.7
Vanguard 7	50.0	42.0	31.7	43.3	45.7	42.5
Columbia	37.0	48.0	35.6	43.3	47.7	42.3
Huron	40.0	50.2	31.3	43.4	43.7	41.7
Erban	50.0	38.4	31.9	42.0	39.9	40.4

This replacement of standard oat varieties by the newer disease-resistant types is apparent in tables 5 and 6. The yield differences between such standard well-known varieties as Cornellian, Keystone, Patterson, Vanguard 7, and Columbia are very minor, ranging from less than 1.0 bushel per acre to 1.3 bushels per acre for five years, as shown in table 5. Growers have switched to other varieties, because the standard ones are susceptible to the rusts, have weak straw, and are in general late maturing. Clinton is at present the outstanding of the new disease-resistant varieties, as indicated in table 6. Of the

Table 6.— Summary of spring oat varietal tests conducted at various locations in Pennsylvania, yields in bushels per acre, 1944-47

Clinton vs. Other Varieties						Performance of Bond Varieties			
VARIETY	1944 4 Tests	1945 4 Tests	1946 3 Tests	1947 4 Tests	4-YEAR AVERAGE ALL TESTS	VARIETY	1946 3 Tests	1947 4 Tests	2-YEAR AVERAGE
Clinton	47.2	50.4	54.9	68.8	55.3	Clinton	54.9	68.8	61.9
Ajax	49.3	55.2	46.3	62.2	53.3	Mohawk	——	68.0	——
Penna. 64A-41	44.7	53.1	50.6	60.1	52.1	Mindo	——	66.5	——
Cornellian	45.4	43.9	43.3	47.6	45.1	Bonda	48.9	62.5	55.7
Patterson	47.0	41.0	38.7	48.7	43.9	Benton	51.0	56.2	53.6
Vicland	49.3	48.0	35.8	29.9	40.8	Eaton	47.8	56.6	52.2

crown rust susceptible varieties, Ajax has yielded best during the past four years. The standard varieties, Cornellian and Patterson, susceptible to rusts, also performed well from 1944-1947, in the absence of rust epidemics. The superiority of Clinton, however, is demonstrated by the fact that it outyielded Cornellian by 10.2 bushels per acre and Patterson by 11.4 bushels per acre for the past four years. The damage caused by Helminthosporium blight to Vicland is reflected in its low yields, particularly for 1946 and 1947, table 6. In addition to Clinton, several other varieties with Bond germ plasm, such as Mohawk, Mindo, Bonda, and Benton, look promising; but further yield data are needed to determine their place in Pennsylvania agriculture. Descriptive notes on these follow:

Clinton — A high yielding, stiff-strawed oat developed by the Iowa Experiment Station from a D69 x Bond cross. It has plump, pale yellow kernels and a high weight per bushel. Its straw is of medium height and is resistant to lodging. It carries resistance to the most common forms of stem rust, crown rust, and smuts and to the new Helminthosporium oat blight (*H. victoriae*). It is the outstanding variety in this State at present.

Ajax — A good yielding variety obtained from Canada. The straw is somewhat taller than that of Clinton and is weaker. It carries resistance to stem rust and Helminthosporium blight (*H. victoriae*) but is susceptible to crown rust. It is the better of the named varieties without Bond germ plasm, but it is inferior to Clinton.

Cornellian — One of the older varieties developed at the New York Station. It is a tall, rather weak-strawed, gray-seeded variety, susceptible to both stem and crown rusts; but it carries resistance to Helminthosporium blight (*H. victoriae*). It can no longer be recommended, because it lacks so many qualities found in new varieties such as Clinton.

Patterson — One of the older varieties developed by The Pennsylvania Experiment Station. Its straw is tall and rather weak. Like Cornellian,

Fig. 3.— The new stiff-strawed, disease-resistant, Clinton oat variety (left) and the Vicland (right), the leading variety in Pennsylvania until the appearance of the new blight disease. The effects of this disease are apparent on Vicland in the above picture.

it is also susceptible to stem and crown rusts, but carries resistance to Helminthosporium blight (*H. victoriae*). It should be considered in the same class as Cornellian.

Vicland – An early variety with resistance to crown rust, stem rust, and smut, but highly susceptible to Helminthosporium blight (*H. victoriae*). It had produced good yields of high quality grain until the appearance of the new oat blight. Because of the severe damage caused by this disease, Vicland can no longer be recommended for Pennsylvania.

Other Bond Varieties – Several of the Bond varieties are now being tested, but they have not been included in the tests long enough to determine their value. These are: **Mohawk** – released by the New York Experiment Station in 1947. It is quite similar to Clinton in yield and appearance, but its straw is somewhat less uniform in height. **Benton** has the same parentage as Clinton and also was developed by the Iowa Experiment Station. It does not yield as well as Clinton and its straw is taller but weaker than that of Clinton. **Bonda** was released by the Minnesota Experiment Station. It ripens about the same time as Clinton, but its straw is somewhat weaker. Its grain is white-hulled and of very high quality. **Mindo** is another Minnesota Bond variety which is very early and has the shortest straw of the Bond varieties tested. Its kernels are yellowish and somewhat smaller than those of Bonda and Clinton. **Eaton** was named by the Michigan Station. It seems the least promising of the new Bond varieties for Pennsylvania.

Performance Records

Performance records of all varieties for each small grain at each location in the State are given in these tables for each year from 1941 through 1947, inclusive.

Winter barley yields: Tables 7 - 13
Winter wheat yields: Tables 14 - 20
Spring oat yields: Tables 21 - 27

Table 7.– 1941 winter barley test results, yelds in bushels per acre in various counties

VARIETY	YORK	LEBANON	JUNIATA	FAYETTE	FRANKLIN	CLARION	CLINTON	CENTRE	AVERAGE
Poland	52.0	45.6	35.5	46.6	44.4	45.0	68.1	29.7	45.9
Ky. No. 1	51.5	44.6	27.6	46.0	46.0	38.5	66.8	31.0	44.0
Tenn. Winter	50.6	37.2	27.2	46.9	36.9	32.3	60.5	25.2	39.6
York Co. Beardless	45.9	36.9	25.0	35.2	38.0	20.0	52.5	25.0	34.8
Mo. Beardless	40.0	32.3	22.7	37.0	34.1	23.6	46.9	19.2	32.0
Kone Brugh Beardless	36.7	32.7	18.3	40.5	33.4	20.8	46.4	21.4	31.3
Md. Marnobarb	42.5	31.7	13.1	29.1	22.5	22.3	55.6	6.1	27.9

Table 8.— 1942 winter barley test results, yields in bushels per acre in various counties

VARIETY	CENTRE	CLARION	FRANKLIN	BEDFORD	FAYETTE	YORK	CLINTON	PERRY	AVERAGE
Wong	26.9	47.8	46.2	20.6	61.7	41.0	55.3	44.9	43.1
Poland	33.1	36.0	44.0	28.8	61.1	44.9	44.1	41.8	41.7
Ky. No. 1	28.9	40.0	39.6	32.0	71.7	35.2	44.3	35.8	40.9
Clinton Co. Sel.	32.7	39.8	45.2	27.0	51.7	43.7	40.1	43.2	40.4
Old Maryland	24.7	38.1	43.0	27.1	54.0	41.5	43.6	39.7	39.0
Tenn. Winter	23.4	37.1	35.8	27.0	62.7	35.3	40.1	44.7	38.3
W. Va. Sel. 1-35-274	25.9	44.1	43.8	24.0	65.7	30.0	36.4	34.1	38.0
Lebanon Co. Sel.	25.5	30.5	33.7	25.5	66.7	39.3	35.6	35.0	36.5
Smooth Awn 86	22.5	38.3	33.9	16.5	68.3	34.3	35.7	41.0	36.3
York Co. Beardless	31.3	36.2	40.7	22.1	60.8	28.4	37.9	31.0	36.1
Hooded 16	14.1	26.3	41.3	24.4	58.4	35.1	41.8	37.6	34.9
Olympian	19.5	39.1	30.4	20.9	60.6	29.9	34.8	37.1	34.0
Brugh's 76	28.4	23.8	36.7	15.5	57.3	30.1	35.3	33.4	32.6
Mo. Beardless	19.4	27.0	38.9	24.0	35.8	32.8	38.8	31.5	31.0
Purdue Sel. 2815643-2-2-2	16.4	29.9	33.8	20.3	59.7	27.7	28.0	28.8	30.6

Table 9.— 1943 winter barley test results, yields in bushels per acre in the various counties

VARIETY	HUNTINGDON	LANCASTER	BLAIR	MIFFLIN	CENTRE	AVERAGE
Ky. No. 1	42.6	35.2	36.3	38.4	52.2	41.2
Poland	46.9	28.2	37.5	36.7	41.3	38.1
Lebanon Co. Sel.	44.3	27.4	35.7	36.7	34.8	35.8
Wong	49.5	26.9	34.5	28.7	38.3	35.6
Old Maryland	44.8	24.3	32.5	33.3	41.6	35.3
Tenn. Winter	46.3	24.0	31.6	35.1	38.9	35.2
Queen Elizabeth	43.6	27.0	34.6	34.5	36.3	35.1
Clinton Co. Sel.	45.2	24.2	32.2	33.3	36.1	34.2
York Co. Beardless	36.2	25.3	34.6	26.7	33.0	31.9
W. Va. Sel. 1-35-274	36.2	23.7	36.9	24.6	32.2	30.7
Olympian	33.2	24.0	31.6	27.0	31.5	29.5
Smooth Awn 86	40.8	19.0	26.8	26.8	27.6	28.2
Hooded 16	30.3	25.3	18.9	23.5	32.1	26.0
Styer's Prolific	——	——	25.8	——	35.5	——

Table 10.— 1944 winter barley test results, yields in bushels per acre in various counties

VARIETY	CENTRE	HUNTINGDON	JUNIATA	LANCASTER	LYCOMING	MIFFLIN	AVERAGE
Poland	36.9	50.8	32.2	49.1	40.0	59.2	44.7
Wong	29.1	59.5	26.0	41.4	33.5	56.9	41.1
Queen Elizabeth	25.2	54.7	25.2	46.0	33.3	59.7	40.7
Styer's Prolific	32.4	42.9	25.4	43.5	39.4	52.7	39.4
Tenn. Winter	26.8	41.7	25.9	43.9	35.8	60.9	39.2
Ky. No. 1	28.9	38.8	25.9	49.4	34.4	52.3	38.3
Ohio No. 1	21.4	43.3	22.0	41.1	30.6	48.9	34.6
York Co. Beardless	24.9	49.6	17.0	43.5	35.4	46.1	36.1
W. Va. Sel. 1-35-274	27.4	52.3	19.2	40.5	28.8	43.8	35.3
Nassau	24.9	44.4	16.8	29.3	23.6	40.0	29.8

Table 11.— 1945 winter barley test results, yields in bushels per acre in various counties

VARIETY	CENTRE	HUNTINGDON	YORK	MIFFLIN	INDIANA	MERCER	AVERAGE FOR ALL TESTS
Wong	40.8	37.1	93.3	77.8	26.4	61.9	56.2
Ky. No. 1	42.0	41.4	61.4	63.4	30.9	61.3	50.1
Poland	47.4	47.6	51.8	58.0	28.7	60.4	49.0
Wisc. Winter	42.9	35.0	61.2	53.5	31.9	50.3	45.8
Queen Elizabeth	41.4	38.3	64.2	64.6	33.7	57.2	49.9
Styer's Prolific	44.4	35.5	65.1	65.5	30.8	61.1	50.4
Tenn. Winter	39.3	32.2	62.0	65.6	24.5	56.6	46.7
Mercer	42.0	40.5	61.1	62.8	28.4	61.8	49.4
Woodwin	40.1	30.8	58.5	62.5	25.0	50.6	44.6
Davidson	40.2	37.1	54.8	63.2	30.3	57.4	47.2
Randolph	26.0	21.5	55.9	43.7	20.5	37.5	34.2
Kirwin	35.5	28.5	57.2	58.6	28.5	52.0	43.4
Nassau	42.2	35.9	60.6	59.3	27.6	59.2	47.5
Ohio No. 1	42.6	26.9	52.1	58.8	29.3	51.6	43.6

Table 12.—1946 winter barley test results, yields in bushels per acre in various counties

VARIETY	CENTRE	JUNIATA	AVERAGE	AVERGE FOR 1944-46 (8 TESTS)
Wong	45.6	37.4	41.5	52.5
Poland	48.4	32.6	40.6	46.9
Kentucky No. 1	42.5	42.5	42.5	48.2
Tennessee Winter	39.5	36.5	38.0	43.0
Nassau	44.5	39.0	41.8	46.1
Queen Elizabeth	44.5	46.3	45.4	48.8
Ohio No. 1	43.0	43.5	43.3	43.2
Mercer	44.4	41.3	42.9	47.8
Davidson	53.0	42.4	42.7	46.8
Wisconsin Winter'	46.6	36.6	41.6	44.7
Woodwin	40.6	40.2	40.4	43.6
Kirwin	39.3	38.2	38.8	41.0

Table 13.— 1947 winter barley yield tests results in Centre County

VARIETY OR STRAIN	WINTER KILLING	DATE OF HEADING	AWN TYPE[1]	MILDEW[2]	LOOSE SMUT	PLANT HEIGHT	TEST WEIGHT	YIELD ACRE
	per cent				*per cent*	*in.*	*lbs./bu.*	*bu.*
Poland	5	5/26	R	Tr.	Tr.	31	51.0	41.9
B 550 (Ky. 5 x E. B.)	5	5/24	R	H+	0	31	45.5	40.2
Tenn. Winter	10	5/24	R	M	Tr.	31	49.6	40.0
Ohio No. 1	0	5/24	R	H	7	31	48.2	39.9
Kentucky No. 1	0	5/30	R	M+	5	35	50.5	39.4
B 574 (Admire x E. B.)	10	5/24	R	M+	0	31	46.3	36.8
Purdue 28154A3-1-1-6-2	2	5/29	S	H	5	31	46.5	36.8
Pa. 46-12	0	6/2	R	L	6	34	46.0	35.4
Pa. 46-2	5	5/26	S	O	6	30	45.7	35.0
Pa. 46-18	10	5/30	R	O	8	31	49.0	34.6
Ludwig	0	5/24	R	Tr.	2	28	48.0	34.5
B580 (Admire x E. B.)	10	5/24	R	H	0	31	46.3	34.5
Purdue 1101 Sel.	2	6/2	R	H	7	35	48.2	33.9
Reno	2	5/24	R	H	10	30	49.0	32.8
Mo. Early Beardless	5	5/22	H	M+	1	31	43.0	32.3
Sel. 412493	5	5/24	R	VH	12	29	47.0	31.4
Tucker	2	5/24	H	M+	Tr.	33	43.5	31.2
Davidson	5	5/24	R	H	1	30	46.5	30.8
Wong	8	5/26	A	O	Tr.	32	44.3	29.1
Pa. 46-11	2	5/30	R	L	7	29	45.3	28.9
Brier	0	5/24	R	L—	0	30	47.0	27.7
Pa. 46-21	5	5/24	R	M	Tr.	26	46.0	27.6
Nassau	2	5/24	S	Tr.	Tr.	31	48.0	27.5
Pa. 46-25	5	5/24	A	Tr.	12	33	45.0	27.5
Pa. 46-9	2	5/31	R	L	2	34	43.5	27.5
Sel. 412487	5	5/24	R	L	6	27	47.3	27.3
B 595 (Ky. 5 x E. B.)	5	5/24	R	H	0	31	47.0	26.6
Okla. 1-35-216	10	5/24	R	H	0	28	47.5	25.4

[1] R — rough awned; S — smooth awned; H — hooded; A — Awnleted.
[2] Degree of infection; Tr — trace; L — light; M — medium; H — high; VH — very high.

Table 14.— 1941 wheat test results, yields in bushels per acre in various counties

VARIETY OR STRAIN	CLINTON	PERRY	CENTRE	AVERAGE
Pa. 114A-36	51.2	50.1	29.1	43.5
Yorkwin	49.6	48.5	31.1	43.1
Thorne	49.3	48.8	30.6	42.9
Pa. 92A-38	49.8	46.8	29.8	42.1
Nured	49.1	45.1	29.0	41.1
Nittany	46.4	46.5	29.6	40.6
Pa. 96A-38	43.0	49.4	29.4	40.6
Pa. 98A-33	46.0	47.2	28.0	40 8
Purkof	43.4	44.0	28.4	38.6
Trumbull	42.6	46.1	25.8	38.2
Leap's Prolific	45.8	42.0	25.1	37.6
Forward	42.5	40.9	25.0	36.1

Table 15.— 1942 wheat test results, yields in bushels per acre in various counties

Variety	Centre	Clarion	Clinton	Lebanon	Cumber-land	Lan-caster	Average
Fairfield	32.5	20.0	28.6	39.3	26.4	41.3	31.4
Red Rock	29.6	25.5	27.9	36.8	24.7	39.0	30.6
Pa. 165-33	29.9	21.5	28.4	37.0	24.6	39.9	30.2
Thorne	31.9	23.1	26.6	35.2	25.0	37.3	29.9
Pa. 114A-36	35.1	28.0	24.7	28.2	16.6	42.9	29.3
Pa. 147-33	26.6	23.0	28.4	35.3	21.4	40.5	29.2
T. N. Ohio 1006	28.3	27.6	23.5	32.0	19.9	40.1	28.6
Nured	33.0	29.6	21.9	28.9	22.1	34.5	28.3
Purdue 7	31.6	21.8	26.9	30.9	20.3	37.9	28.2
Forward	29.9	22.1	25.1	30.8	22.0	37.4	27.9
Trumbull	29.4	27.4	25.2	27.2	20.4	37.2	27.8
Leap's Prolific	30.5	23.6	23.8	27.6	20.2	39.0	27.5
Fulcaster	28.1	24.7	19.8	33.2	21.8	36.8	27.4
Leapland	27.9	25.7	26.6	27.4	16.7	38.7	27.2
Cornell 534C 21-64-63	——	18.4	21.0	38.4	17.9	39.7	27.1
Pa. 92A-39	31.5	21.7	21.8	30.9	19.6	35.4	26.8
Purkof	30.0	21.8	23.4	39.8	19.3	35.1	26.6
Canawa	32.1	21.9	21.9	27.4	19.3	35.5	26.4
Honor	32.1	18.3	18.6	32.3	18.8	37.0	26.2
Nittany	27.5	28.0	17.3	31.3	14.6	37.4	26.0
Pa. 110A-36	32.1	20.1	23.1	26.7	18.9	34.2	25.9
Yorkwin	26.9	21.9	17.9	34.0	17.3	35.3	25.6
Pa. 98A-33	34.4	20.6	19.4	29.1	16.2	33.9	25.6
Pa. 92A-38	33.9	19.3	22.4	26.9	18.8	29.5	25.1
Harvest King	32.0	19.7	17.4	25.3	22.2	32.4	24.5
New Junior No. 6	31.4	15.6	16.9	27.3	17.0	34.7	23.8
Valprize	22.3	18.1	18.9	27.7	16.2	34.9	23.0
Pa. 117A-36	29.1	20.9	13.8	22.8	11.4	36.8	22.5
Pa. 96A-38	28.6	10.3	16.0	22.6	15.3	34.3	21.2
Wabash	21.3	11.7	16.4	24.5	17.7	33.0	20.8

Table 16.— 1943 wheat test results, yields in bushels per acre in various counties

Variety	Blair	Centre	Clearfield	Clinton	Hunting-don	Lan-caster	Mifflin	Average
Fairfield	37.1	37.8	24.5	40.8	38.3	23.9	29.5	33.1
Yorkwin	41.6	36.5	23.5	41.0	32.0	25.1	27.0	32.4
Pa. 92A-38	38.8	35.6	21.6	37.5	39.6	29.4	22.8	32.2
Trumbull	39.5	34.8	26.9	35.0	32.5	21.4	28.5	31.3
Purkof	37.1	33.1	24.5	41.3	31.5	21.3	27.8	30.9
Purdue 7	39.0	33.1	18.8	37.3	35.3	23.4	29.5	30.9
Pa. 165-33	35.8	34.3	23.6	34.6	35.1	24.5	26.6	30.6
Pa. 147-33	35.8	35.0	20.6	35.9	32.5	25.0	28.8	30.5
Pa. 114A-36	37.5	32.0	21.3	36.5	35.8	25.9	21.9	30.1
Nured	35.6	29.3	19.5	36.9	36.8	24.8	25.6	29.8
Pa. 56A-40	35.6	36.8	27.9	38.0	35.1	18.8	15.4	29.7
Red Rock	35.0	34.1	20.3	36.1	31.4	21.8	28.8	29.6
Cornell 595	38.1	32.0	25.8	36.7	33.0	17.9	23.3	29.5
Pa. 47A-40	38.8	24.3	22.6	28.8	32.6	25.6	30.5	29.1
Pa. 98A-33	33.4	25.8	19.8	35.8	36.9	27.9	19.0	28.4
Pa. 92A-39	30.6	33.3	21.4	34.9	34.4	22.0	21.3	28.3
Thorne	34.0	30.9	16.3	29.6	35.1	19.8	28.1	27.7
Pa. 59A-40	34.3	30.8	19.4	33.0	33.0	20.0	21.4	27.4
Nittany	29.5	36.0	17.9	33.4	33.3	21.5	19.3	27.3
Pa. 51A-40	31.4	29.1	22.3	33.6	32.3	20.6	20.8	27.2
Canawa	32.4	30.9	18.6	31.4	35.1	18.8	22.5	27.1
Forward	30.1	32.5	18.8	33.3	30.9	20.1	23.6	27.0
Fulcaster	33.6	27.4	19.8	30.6	32.8	27.8	27.0	27.0
Leap's Prolific	32.8	32.6	19.1	29.1	32.0	18.0	21.3	26.4
Pa. 53A-40	32.4	32.0	20.1	33.3	29.0	18.9	16.5	26.0
Pa. 50A-40	33.9	28.1	22.5	33.4	29.4	17.0	17.4	26.0
Leapland	29.0	32.8	19.6	27.9	27.8	17.5	23.0	25.4
New Junior No. 6	31.4	28.1	17.8	34.1	28.9	15.1	21.8	25.4
Harvest King	35.0	26.8	19.6	18.0	32.4	18.0	24.3	24.9

Table 17.— 1944 wheat test results, yields in bushels per acre in various counties

VARIETY	CENTRE	CLEAR-FIELD	HUNT-ING-DON	JUNIATA	LAN-CASTER	LY-COMING	AVERAGE FOR ALL TESTS
Pa. 54A-41	27.5	26.5	44.1	41.9	28.8	40.5	34.9
Pa. 55A-41	26.4	28.8	41.3	43.1	30.0	37.5	34.5
Pa. 56A-41	28.1	23.1	41.4	42.7	28.4	39.2	33.8
Thorne	26.1	24.0	40.6	39.0	31.3	37.2	33.1
Pa. 56A-40	23.8	25.5	41.5	39.8	28.4	38.7	32.9
Yorkwin	28.7	27.0	40.5	40.8	26.3	34.0	32.9
Fairfield	26.4	24.4	41.8	40.4	29.3	34.9	32.9
Red Rock	29.8	23.0	40.0	37.0	33.0	34.1	32.8
Nured	28.3	29.4	36.2	36.5	29.5	36.6	32.7
Purdue 7	25.1	24.3	41.4	40.5	28.1	37.1	32.7
Pa. 165-35	28.3	23.4	36.9	36.0	33.1	38.4	32.7
Pa. 68A-40	24.2	28.3	39.1	35.8	29.0	37.8	32.4
Pa. 57A-40	25.0	26.5	40.4	38.2	26.9	36.6	32.3
Trumbull	24.9	25.7	39.5	38.2	28.0	36.9	32.2
Forward	28.0	25.9	38.2	34.1	28.0	36.8	31.8
Purkof	26.8	23.6	37.2	37.0	29.3	35.3	31.5
Nittany	26.4	28.3	35.4	36.8	27.7	34.3	31.5
Pa. 92A-39	25.5	30.1	33.2	35.8	29.0	33.4	31.2
Pa. 53A-40	26.3	26.5	38.0	35.8	28.1	31.5	31.0
Fulcaster	26.2	21.1	35.9	33.7	32.2	32.5	30.3
Pa. 114A-36	25.3	27.0	34.2	32.9	27.8	31.8	29.8
Leap's Prolific	23.9	23.4	33.7	35.0	26.5	34.2	29.4
Pa. 54A-40	23.4	26.3	34.3	31.9	27.2	30.4	28.9
Pa. 92A-38	23.8	26.2	32.8	28.4	28.1	33.8	28.8
Pa. 98A-33	21.5	23.2	29.7	31.2	26.6	29.5	26.9

Table 18.— 1945 wheat test results, yields in bushels per acre in various counties

VARIETY	CENTRE	HUNTING-DON-	INDIANA	MERCER	MIFFLIN	SUSQUE-HANNA	YORK	AVERAGE
Thorne	42.7	24.4	23.7	38.4	50.7	44.6	33.1	36.8
Pa. 54A-41	39.0	22.6	25.8	40.2	50.2	40.9	36.7	36.5
Pa. 55A-41	44.5	23.3	24.3	36.1	50.5	40.1	30.2	35.6
Pa. 57A-40	41.4	22.6	21.3	43.1	50.2	40.2	28.0	35.3
Cornell 595	37.4	22.1	15.5	40.7	50.7	43.4	33.4	34.7
Pa. 53A-40	41.1	19.9	18.4	40.9	48.9	39.2	30.8	34.2
Pa. 53A-41	39.6	21.3	27.2	33.9	46.2	38.4	32.3	34.1
Pa. 165-33	34.5	22.7	20.9	38.2	48.5	37.6	34.8	33.9
Leap's Prolific	40.4	24.9	19.6	37.3	45.2	34.2	34.0	33.7
Pa. 56A-41	38.2	20.2	25.4	34.5	49.2	43.1	25.0	33.7
Pa. 107A-42	38.3	19.1	22.6	37.7	45.7	37.1	34.6	33.6
Nured	35.8	23.3	19.4	40.9	43.5	32.5	37.0	33.2
Trumbull	36.7	22.6	23.2	36.5	41.9	36.3	34.3	33.1
Yorkwin	38.3	23.4	18.0	35.2	50.4	35.7	30.4	33.1
Pa. 54A-40	36.0	18.9	19.3	41.7	50.7	34.9	29.4	33.0
Fairfield	33.9	22.6	19.1	36.8	48.1	36.4	31.6	32.6
Pa. 56A-40	26.2	22.5	20.7	36.9	53.9	37.7	30.6	32.6
Forward	36.5	22.1	20.4	35.0	44.9	32.4	35.9	32.5
Nittany	37.7	20.0	21.4	45.8	32.8	36.3	30.7	32.1
Red Rock	35.8	20.1	17.9	32.6	46.8	35.1	35.9	32.0
Pa. 109A-42	36.0	21.9	20.9	37.1	42.9	29.6	35.4	31.9
Pa. 68A-40	33.1	18.9	17.5	34.3	43.0	35.3	39.8	31.7
Purkof	36.0	19.2	19.8	34.6	40.1	33.5	32.3	30.8
Fulcaster	32.6	24.8	20.2	36.3	39.7	28.5	28.3	30.1
Pa. 51A-40	33.1	19.6	19.8	35.4	43.7	28.2	29.0	29.8

Table 19.— 1946 wheat test results, yields in bushels per acre in various counties

VARIETY OR STRAIN	JUNIATA	CENTRE	LEBANON	AVERAGE
Red Rock	32.5	26.0	25.1	27.9
Thorne	30.6	23.8	24.1	26.2
Pa. 57A-40	27.1	27.2	24.3	26.2
Fulcaster	29.8	24.9	22.1	25.6
Yorkwin	28.7	23.6	24.6	25.6
Pa. 114A-42	30.2	23.6	22.5	25.4
Trumbull	26.5	23.5	25.3	25.1
Pa. 108A-42	27.5	23.5	23.8	24.9
Nured	27.4	24.7	22.6	24.9
Pa. 53A-40	28.6	23.5	22.0	24.7
Fairfield	30.8	21.4	20.6	24.3
Pa. 165-33	28.0	20.3	24.5	24.3
Leap's Prolific	26.5	22.6	22.6	23.9
Pa. 54A-40	27.0	21.2	22.9	23.7
Pa. 107A-42	27.7	21.5	22.0	23.7
Pa. 109A-42	26.6	23.5	21.1	23.7
Nittany	25.7	20.6	23.3	23.2
Pa. 54A-41	25.2	20.2	23.7	23.0
Purkof	26.7	21.3	20.9	23.0
Pa. 56A-41	27.6	21.9	19.0	22.8
Forward	26.8	21.6	20.1	22.8
Pa. 55A-41	26.4	20.2	20.7	22.4
Cornell 595	26.1	20.1	18.9	21.7
Pa. 56A-40	26.8	18.3	19.4	21.5
Pa. 112A-42	24.1	20.6	18.5	21.1

Table 20.— 1947 wheat test results, yields in bushels per acre in various counties

VARIETY OR STRAIN	AWNEDNESS	CENTRE	LANCASTER	AVERAGE
Pa. 114A-42	Beardless	45.8	33.2	39.5
Fairfield	Beardless	44.2	30.5	37.4
Nured	Beardless	41.6	30.4	36.0
Pa. 54A-41	Beardless	43.4	27.5	35.5
Yorkwin	Beardless	41.9	29.1	35.5
Nittany	Bearded	41.8	27.6	34.7
Cornell 595	Beardless	41.3	28.1	34.7
Purdue 384A5-5-1-26	Beardless	39.0	29.3	34.2
II-40-5	Beardless	40.4	26.7	33.6
II-40-3	Beardless	38.5	27.8	33.2
Purkof	Beardless	40.5	25.8	33.2
Pa. 55A-41	Beardless	41.8	23.8	32.8
Pa. 57A-40	Beardless	36.5	28.7	32.6
Thorne	Beardless	37.2	27.6	32.4
II-39-5	Beardless	38.4	25.5	32.0
Blackhawk	Bearded	38.1	25.6	31.9
Leap's Prolific	Beardless	37.8	25.2	31.5
II-40-4	Beardless	37.0	26.0	31.5
II-40-7	Beardless	38.3	24.2	31.3
II-40-13	Beardless	33.5	28.2	30.9
II-40-6	Beardless	33.9	25.0	29.5
II-40-8	Beardless	33.1	24.0	28.6
Purplestraw-Chinese x Michigan-Amber	Beardless	29.9	26.0	28.0
II-40-9	Beardless	33.0	22.4	27.7
II-40-10	Beardless	28.4	22.8	25.6

Table 21.— 1941 spring oat test results, yields in bushels per acre in various counties

VARIETY	CENTRE	BERKS	JEFFERSON	JUNIATA I	JUNIATA II	LYCOMING	PERRY	SOMERSET	SUSQUEHANNA	VENANGO	WESTMORELAND	AVERAGE
Patterson	59	42	51	41	51	62	69	40	41	40	63	51
Keystone	55	48	55	48	49	66	70	43	37	40	64	52
Cornellian	59	41	53	47	54	64	76	32	30	37	61	50
Ithacan	61	31	40	33	43	44	59	31	26	33	44	40
Lenroc	58	44	50	50	60	49	67	42	44	33	66	51
Victory	57	36	35	39	45	52	62	31	30	30	48	42
Richland	44	33	50	31	42	35	60	33	38	26	47	40
Iogold	47	37	51	47	50	51	72	35	34	34	51	45
Markton	53	41	51	40	45	52	62	34	30	35	50	45
S. Dakota 334	52	36	41	34	45	40	66	32	23	30	46	40
Huron	62	38	32	40	40	45	62	29	25	27	44	40
Columbia[1]	29	39	32	41	41	42	54	24	17	38	49	37
Vanguard 7	53	42	56	48	52	63	81	44	33	19	56	50
Erban	54	40	58	36	43	57	85	37	44	36	62	50
Pa. 90A-27	53	38	48	44	50	50	73	31	35	31	45	45
Pa. 78A-32	56	42	57	41	41	54	68	44	47	43	54	50
Pa. 84A-32	54	45	45	46	45	45	74	38	37	39	63	48
Pa. 65A-33	62	43	45	48	51	58	71	34	37	35	50	49
Pa. 74A-33	60	44	53	48	49	52	71	40	42	44	48	50
Pa. 75A-33	56	44	56	51	49	57	77	36	43	38	62	52
Pa. 83A-38	57	41	47	46	51	53	67	35	33	36	44	46
Pa. 89A-38	60	41	51	50	57	62	77	40	38	39	61	52
Pa. 95A-38	52	38	45	48	45	45	67	27	26	29	46	42
Pa. 99A-38	53	41	39	46	46	53	74	37	37	39	51	47
Pa. 105A-38	55	41	49	50	48	50	78	40	40	32	54	49
Pa. 106A-38	53	37	37	45	45	50	72	28	33	36	47	44

[1] Columbia had poor stands in some tests.

Table 22.— 1942 spring oat test results, yields in bushels per acre in various counties

VARIETY	SUSQUE-HANNA	JUNI-ATA	JEF-FERSON	SOMER-SET	BERKS	LYCOM-ING	VEN-ANGO	CENTRE	AVERAGE
Pa. 64A-41	84.4	37.5	85.0	58.7	51.1	35.4	45.8	48.9	55.8
Pa. 55A-40	78.1	38.6	74.4	63.3	45.6	40.3	48.7	41.4	53.8
Cornell 5-6-2	82.0	28.6	79.4	59.2	41.7	35.8	48.7	41.4	52.1
Pa. 90A-27	81.5	36.6	70.5	53.8	44.6	38.0	50.1	41.6	52.1
Huron	77.6	33.5	76.1	51.9	43.3	40.1	39.6	39.5	50.2
Pa. 56A-40	86.3	29.3	74.5	60.8	52.5	33.2	28.9	33.3	49.8
Pa. 61A-41	72.4	37.4	74.1	58.9	43.1	33.0	39.6	39.8	49.6
Pa. 65A-41	83.3	29.8	76.0	46.6	43.7	28.0	42.7	42.6	49.1
Patterson	68.3	31.2	78.6	58.2	41.0	35.7	40.0	34.8	48.5
Pa. 75A-33	77.7	36.7	64.2	49.3	39.6	33.7	46.1	40.1	48.4
Pa. 74A-33	73.6	31.5	63.2	55.3	44.8	33.0	50.7	32.0	48.0
Columbia	83.6	37.6	75.7	55.1	39.6	34.8	17.2	40.3	48.0
Cornellian	68.0	27.2	79.4	50.5	43.4	36.7	38.8	38.8	47.9
Pa. 65A-33	71.2	28.3	72.3	46.7	44.0	36.1	47.9	33.4	47.5
Pa. 63A-41	71.6	30.5	68.9	55.6	40.6	36.4	36.5	36.3	47.0
U. S. Sel. 1880	58.9	31.4	65.4	51.5	48.7	38.8	40.6	39.6	46.9
Beaver	68.7	38.2	57.6	48.3	42.1	36.5	47.8	34.5	46.7
Lenroc	75.8	25.1	77.8	49.3	40.7	28.9	41.2	31.0	46.2
Pa. 84A-32	68.2	29.8	63.4	51.5	40.3	33.7	47.6	29.6	45.5
Pa. 78A-32	65.4	27.7	69.0	45.3	39.7	32.0	47.6	37.5	45.5
Boone	78.9	30.0	60.1	51.9	40.7	29.0	34.6	36.0	45.2
Cartier	72.8	28.9	67.5	43.4	39.8	27.4	40.9	35.6	44.5
Vicland	68.0	25.9	63.4	46.5	37.8	36.6	37.3	39.9	44.4
Royal Scott	60.6	25.3	74.6	49.5	36.8	30.5	41.2	33.5	44.0
Keystone	63.4	21.8	66.2	49.5	35.2	38.6	37.9	36.4	43.6
Iogold	66.6	30.6	71.3	48.3	34.2	30.3	42.5	24.8	43.6
Pa. 67A-41	80.2	24.1	65.1	43.3	40.6	32.7	24.4	35.0	43.2
Vanguard 7	66.6	23.9	55.7	55.4	36.6	21.0	40.0	37.1	42.0
Victory	61.7	23.3	67.2	43.0	31.6	32.0	34.6	36.5	41.3
Sun	57.0	23.7	66.0	50.3	34.9	22.8	41.9	31.6	41.0
U. S. Sel. 1082	57.9	24.2	59.1	43.4	34.3	20.0	43.0	28.2	38.8
Erban	60.5	18.1	64.4	43.1	33.4	19.0	37.0	32.1	38.4
Markton	58.1	26.1	60.1	40.0	29.9	24.0	37.4	29.9	38.2
U. S. Sel. 4624	58.8	24.3	56.4	37.7	32.6	23.7	37.3	28.5	37.4
Ithacan	55.9	15.9	58.0	42.6	28.0	18.0	34.3	37.0	36.2
U. S. Sel. 1968	45.1	21.4	45.3	35.7	29.7	18.8	34.0	24.0	31.8

Table 23.— 1943 spring oat test results, yields in bushels per acre in various counties

VARIETY	JUNIATA	LANCASTER	HUNTINGDON	CLINTON	CENTRE	AVERAGE ALL TESTS
Pa. 64A-41	31.4	45.3	46.0	37.6	43.2	40.7
Ajax	28.8	38.1	44.1	38.7	38.7	37.7
Vicland	31.7	36.0	49.9	28.3	40.2	37.2
Pa. 89A-38	27.4	41.8	34.6	28.1	50.1	36.4
Pa. 42A-42	31.9	39.5	44.1	34.6	28.7	35.8
Pa. 55A-40	29.5	38.8	41.6	32.0	37.0	35.8
Columbia	30.2	34.2	43.1	36.3	34.1	35.6
Pa. 90A-27	29.3	36.4	37.0	28.1	45.8	35.3
Pa. 41A-42	27.4	40.6	39.1	23.1	43.9	34.8
Pa. 61A-41	28.3	41.4	39.4	35.0	28.6	34.6
Beaver	28.1	35.5	31.9	23.6	45.5	34.5
Cornellian	31.0	29.5	36.7	49.6	25.6	34.5
U.S. 1880 C.I. 4181	31.7	33.2	43.5	30.1	30.2	33.7
C.I. 4189	23.0	32.0	45.1	34.3	33.5	33.6
Mabel	23.4	37.0	40.4	32.3	32.3	33.1
Boone	24.6	29.8	43.2	26.6	40.7	33.0
Pa. 44A-42	27.1	36.8	38.9	34.0	25.2	32.4
Erban	23.6	23.4	37.0	34.8	40.5	31.9
Vanguard 7	25.4	26.9	36.1	28.3	41.7	31.7
Keystone	35.0	27.5	34.6	42.6	18.5	31.6
Huron	25.3	32.7	35.1	33.4	30.2	31.3
Cornell Sel. 484a3-87-10	26.2	23.8	36.0	33.4	36.8	31.2
Patterson	31.0	24.1	29.2	36.9	32.7	30.8
Cornell 5-6-2	27.0	31.2	29.6	29.7	33.2	30.1
C.I. 4194	26.2	28.0	42.6	21.2	32.2	30.0
C.I. 4195	22.4	23.0	39.6	22.3	39.4	29.3
C.I. 4197	23.6	23.0	41.5	31.5	30.5	30.0
Pa. 65A-41	25.5	29.7	35.2	28.3	25.7	28.9
C.I 4180	25.9	27.1	38.4	25.3	24.4	28.2
Pa. 43A-42	22.4	25.5	33.4	27.2	31.4	28.0
Miomark	26.0	31.0	28.9	27.7	25.5	27.4
Royal Scott	25.6	14.7	26.0	34.5	27.7	25.7
Sun	23.6	14.6	20.3	31.1	24.9	22.9
Exeter	24.3	8.3	27.4	32.8	17.7	22.1
Roxton	18.7	7.8	22.0	36.2	16.6	20.3

Table 24.— 1944 spring oat test results, yields in bushels per acre in various counties

VARIETY	SUSQUE-HANNA	CLEAR-FIELD	CENTRE Phosphate Plots	MERCER	CRAW-FORD	CENTRE Low Fertility	LAN-CASTER	AVERAGE YIELDS
Cornell 484a	82.8	78.6	67.8	39.6	36.2	26.2	23.0	50.6
C.I. 4164	61.8	70.8	72.0	45.6	36.6	33.8	26.6	49.6
Vicland	72.0	65.6	78.0	42.4	36.4	23.8	23.0	49.0
Tama	71.0	65.2	64.6	47.4	31.8	29.6	22.8	47.5
Mabel	80.4	56.2	65.2	48.4	27.8	25.6	23.6	46.7
Ajax	81.0	60.8	67.8	34.8	32.6	26.6	22.6	46.6
Pa. 55A-40	70.2	65.2	67.2	43.6	24.4	26.4	26.4	46.2
Pa. 64A-41	70.6	64.2	65.8	41.6	19.8	25.6	24.1	44.5
Pa. 41A-42	68.8	61.8	65.4	37.0	24.2	27.4	26.6	44.5
Beaver	71.4	64.6	67.8	44.2	12.8	19.4	26.6	43.8
Boone	63.4	61.4	69.8	38.2	26.4	25.0	21.4	43.7
Pa. 42A-42	71.6	62.2	56.0	39.8	23.2	27.8	24.6	43.6
Pa. 89A-38	71.6	64.6	68.2	33.2	19.8	20.8	26.2	43.5
Huron	74.8	64.8	65.4	36.2	19.2	23.0	20.1	43.4
Columbia	64.8	64.4	63.0	40.2	27.6	25.4	17.6	43.3
Keystone	69.2	70.0	51.0	36.6	33.6	17.0	25.4	43.3
Vanguard 7	64.4	65.0	63.2	36.6	26.6	26.4	20.6	43.3
Patterson	70.8	64.0	54.8	28.4	28.4	23.4	24.8	42.1
Pa. 43A-42	71.4	63.0	62.0	32.2	24.8	28.2	12.0	42.1
Erban	67.6	64.4	62.0	41.2	22.4	25.0	11.4	42.0
Cornellian	65.8	67.0	50.0	37.0	28.2	23.6	20.4	41.7
Pa. 90A-27	60.2	63.2	58.2	43.2	19.4	24.2	23.0	41.6
Roxton	66.8	62.8	52.2	36.4	26.6	19.0	23.0	41.0
C. I. 4180	75.8	54.8	54.6	28.4	23.6	29.0	20.0	40.9
Pa. 65A-41	63.6	57.6	54.0	37.2	20.6	24.0	19.8	39.5
Royal Scott	55.6	69.8	56.0	35.0	21.8	18.0	20.6	39.5
Cornell 5-6-2	66.4	57.4	54.2	31.0	18.4	22.4	24.2	39.1
Ithacan	63.6	67.2	50.6	32.8	21.6	21.0	16.0	39.0
Miomark	67.0	59.6	58.0	33.0	13.2	26.4	15.0	38.9
Pa. 105A-38	65.0	58.2	60.6	28.0	14.0	16.8	25.6	38.3
Lenroc	54.4	61.4	52.6	31.2	21.0	18.6	17.8	36.7
Exeter	66.8	65.8	——	30.8	18.2	——	19.2	——
Clinton (1335-3)	79.6	63.4	——	——	26.6	——	19.2	——
C.I. 4163	63.6	56.2	61.6	33.6	25.4	24.4	——	——
C.I. 4181	69.2	64.0	——	36.0	25.4	——	20.4	——
C.I. 4189	63.4	61.2	——	37.0	27.6	——	20.2	——

Table 25.— 1945 spring oat test results, yields in bushels per acre in various counties

VARIETY	CENTRE	LANCASTER	SUSQUE-HANNA	MERCER	AVERAGE
Vicland	66.5	33.6	61.7	30.0	48.0
Tama	65.8	31.4	58.8	33.1	47.3
Boone	77.9	31.3	66.6	33.3	52.3
Clinton	72.2	29.9	65.6	33.8	50.4
Beaver	70.1	28.3	60.8	24.2	45.9
Cornellian	60.4	28.4	62.3	24.4	43.9
Patterson	53.7	29.8	56.2	24.1	41.0
Pa. 90A-27	73.4	28.2	62.3	27.5	47.9
Keystone	70.3	28.8	59.5	26.2	46.2
Ajax	75.3	38.3	73.0	34.2	55.2
Vanguard 7	67.1	27.1	60.4	28.2	45.7
Erban	56.5	26.3	51.3	25.4	39.9
Ithacan	50.9	23.7	55.1	22.5	38.1
Columbia	64.7	30.4	65.6	30.1	47.7
Huron	59.6	30.1	55.2	29.7	43.7
Mabel	71.6	36.6	66.7	33.6	52.1
Lenroc	62.2	27.7	64.4	21.8	44.0
Markton	43.2	26.2	41.9	22.2	33.4
Cornell 484A3	67.7	28.7	66.7	29.8	38.2
Forvic, C.I. 4164	76.3	33.1	55.7	30.0	48.8
C.I. 4165	70.1	29.7	59.1	26.6	46.4
C.I. 4163	67.7	25.7	51.9	26.1	42.9
C.I. 4181	67.9	31.3	60.1	24.4	45.9
C.I. 4186	77.3	37.1	59.6	35.8	52.5
C.I. 4291	77.5	34.8	66.2	32.1	52.7
C.I. 4285	75.0	33.0	62.6	31.2	50.5
C.I. 4289	70.1	28.1	51.1	27.9	44.3
Pa. 55A-40	66.7	32.2	68.3	34.7	50.5
Pa. 64A-41	70.1	36.9	70.4	34.8	53.1
Pa. 89A-38	75.3	31.2	71.6	27.2	51.3
Pa. 41A-42	68.3	30.4	63.6	28.6	47.7
Pa. 42A-42	68.6	35.9	66.6	23.0	48.5
Pa. 42A-43	65.1	30.4	65.0	34.0	48.6
Pa. 43A-43	58.6	29.4	65.5	31.4	60.9
Pa. 180A-44	68.9	34.4	58.4	29.2	47.7
Pa. 188A-44	65.4	29.2	56.5	26.3	44.4

Table 26.— 1946 spring oat test results, yields in bushels per acre in various counties

Variety or Strain	Centre	Mercer	Susquehanna	Average
Clinton	44.9	62.2	57.5	54.9
C.I. 4291	47.2	54.6	54.3	52.0
C.I. 4287	50.3	55.9	47.1	51.1
Benton	47.3	54.3	51.5	51.0
64A-41	47.0	50.4	54.3	50.6
C.I. 3845	51.3	46.4	49.2	49.0
Bonda	52.2	52.1	42.3	48.9
C.I. 4330	51.1	54.9	38.7	48.2
C.I. 4186	54.5	53.9	36.0	48.1
Beaver	50.1	56.7	36.8	47.9
C.I. 3908	49.1	54.7	39.7	47.8
Pa. 15A-45	45.3	56.8	40.4	47.5
Ajax	48.0	50.1	40.8	46.3
C.I. 4372	57.9	44.2	35.9	46.0
C I. 4189	54.6	45.6	37.4	45.9
C.I. 4285	50.5	48.3	38.5	45.8
C.I. 4371	52.1	42.7	40.9	45.2
Pa. 13A-45	47.7	46.5	41.4	45.2
C.I. 3972	53.8	44.4	35.3	44.5
C.I. 4165	49.4	41.5	42.1	44.3
Cornellian	39.8	44.4	45.7	43.3
Pa. 6A-45	43.7	50.3	35.3	43.1
C.I. 3909	44.6	50.0	32.6	42.4
Pa. 179A-44	44.5	42.5	39.1	42.0
Pa. 147A-44	44.7	38.2	42.2	41.7
Forvic	45.9	39.0	39.4	41.4
C.I. 4288	48.9	38.8	32.4	40.0
C.I. 4535	39.1	38 0	42.6	39.9
Patterson	41.9	34.2	40.0	38.7
Pa. 157A-44	38.5	42.9	32.5	38 0
Boone	53.4	36.3	24.1	37.9
Tama	40.7	33.7	36.3	36.9
Pa. 1A-45	36.3	36.5	35.3	36.0
Vicland	42.8	40.3	24.3	35.8
Pa. 23A-45	38.9	36.1	31.7	35.6
Pa. 161A-44	36.0	39.3	25.1	33.5

Table 27.— 1947 spring oat test results, yields in bushels per acre in various counties

Variety or Strain	Susquehanna	Mercer	Centre	Lancaster	Average
Clinton	55.8	61.3	88.2	69.7	68.8
Mohawk	52.7	62.7	94.4	62.0	68.0
C.I. 4352 (D69 x Bond)	59.0	60.3	93.1	59.7	68.0
Mindo	44.7	72.0	95.1	54.0	66.5
C.I. 4532 (D69 x Bond)	55.7	58.7	80.4	65.0	65.0
C.I. 4170 (Bond x Rainbow)	38.3	67.0	96.5	56.3	64.5
C.I. 4330 (Bond x Iogold)	50.7	58.7	85.1	57.7	63.1
Bonda	59.3	68.7	72.2	49.7	62.5
Ajax	46.7	56.7	62.7	62.7	62.2
C.I. 4372 (Bond x D67)	52.3	54.3	82.6	54.7	61.0
C.I. 4271 (Bond x D67)	52.3	56.3	80.4	52.3	60.3
Pa. 64A-41	39.3	54.7	91.2	55.0	60.1
C.I. 4287 (D69 x Bond)	45.3	55.7	73.7	56.7	57.9
Eaton	41.7	53.7	78.9	52.0	56.6
Benton	47.0	52.7	70.2	55.0	56.2
C.I. 4253 (Bond x Rainbow)	48.3	64.0	65.1	46.3	55.9
Sac	48.0	52.7	66.9	54.3	55.5
Advance	40.0	49.0	65.6	48.7	50.8
Patterson	33.0	44.0	81.5	42.0	50.1
Cornellian	45.7	50.0	54.6	40.0	47.6
Vicland	14.0	22.7	67.6	15.3	29.9